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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/329,217	06/10/1999	FRANCINE J. PROKOSKI		7823

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EXAMINER

MILLER, MARTIN E

ART UNIT	PAPER NUMBER
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2623

DATE MAILED: 01/21/2003

2

Please find below and/or attached an Office communication concerning this application or proceeding.

11

Interview Summary

Application No.

09/329,217

Applicant(s)

PROKOSKI, FRANCINE J.

Examiner

Martin Miller

Art Unit

2623

All participants (applicant, applicant's representative, PTO personnel):

- (1) Martin Miller. (3) _____.
- (2) Clyde Christofferson, Reg. no. 34,138. (4) _____.

Date of Interview: 06 January 2003.

Type: a) ☒ Telephonic b) ☐ Video Conference
c) ☐ Personal [copy given to: 1) ☐ applicant 2) ☐ applicant's representative]

Exhibit shown or demonstration conducted: d) ☐ Yes e) ☐ No.
If Yes, brief description: _____.

Claim(s) discussed: none.

Identification of prior art discussed: _____.

Agreement with respect to the claims f) ☒ was reached. g) ☐ was not reached. h) ☐ N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: Applicant filed an amendment to the specification that had numerous errors with respect to the line numbers of the paragraphs to be amended. The Applicant's representative was informed of the errors and asked if the examiner could change the line numbers to correspond to the specification in the file. Applicant's representative gave the examiner permission to make the changes. The attached sheets are a copy of the changes made to the amendment.

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

- i) ☒ It is not necessary for applicant to provide a separate record of the substance of the interview (if box is checked).

Unless the paragraph above has been checked, THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN ONE MONTH FROM THIS INTERVIEW DATE TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.

Examiner Note: You must sign this form unless it is an Attachment to a signed Office action.

M. Miller 1/14/03
Examiner's signature, if required

Summary of Record of Interview Requirements

Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record

A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews

Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

37 CFR §1.2 Business to be transacted in writing.

All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:

- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case unless both applicant and examiner agree that the examiner will record same. Where the examiner agrees to record the substance of the interview, or when it is adequately recorded on the Form or in an attachment to the Form, the examiner should check the appropriate box at the bottom of the Form which informs the applicant that the submission of a separate record of the substance of the interview as a supplement to the Form is not required.

It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:

- 1) A brief description of the nature of any exhibit shown or any demonstration conducted,
- 2) an identification of the claims discussed,
- 3) an identification of the specific prior art discussed,
- 4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
- 5) a brief identification of the general thrust of the principal arguments presented to the examiner,
(The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
- 6) a general indication of any other pertinent matters discussed, and
- 7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.

C8
particularly if the weapon is considered unsafe, or if it is necessary to preserve the weapon in its present condition as to residue etc.

Paragraph at page 12, lines 28-30 now reads:

C9
Heat conduction analyses can be performed by heating the ballistic item and imaging it while it cools. Estimates of the depth and volume of indentations, striations, and gouges can be made based on their cooling rates. The material composition of each area of the item must be considered.

Paragraph at page 13, lines ^{2 mem}~~1~~-16 now reads:

Current systems, such as DrugFire, compare an unknown ballistic item's image to all corresponding images in a database, producing a correlation value for each. Database images are then re-ordered based upon that correlation value, with the highest correlation ranked first. In controlled testing where the identities of all siblings are known, a measure of the accuracy and efficiency of the matching engine is the position of siblings in the re-ordering. The results shown below in the left column are taken from the DrugFire system manufactured by Mnemonics Systems Inc.. The right column shows the use of a different matching engine (FlashCorrelation® patented by the inventor) with the same visual image database as used by Mnemonics. 1157 shell casings from 229 weapons were used for the tests. The images were all taken with a conventional videomicroscope camera. MIKOS did not have the opportunity to collect its own images of the casings. Therefore, no infrared images were obtained or used for this comparison test. The purpose of this table is merely to show how ballistic matching systems are evaluated. In a smaller test, the use of infrared imagery produced significant additional improvement in

position of siblings over the use of visual imagery, with nearly all siblings clustered at the very top of the ranking.

men
17-25
Paragraph at page 16, lines ~~19-27~~ now reads:

Selection of features to be characterized, and the characterization process, can be fully automated or manually assisted. Partitioning significantly reduces the search time required to look for matches, but requires knowledge about the variations which may occur in firings of a particular weapon. For example, changing the ammunition size or type used will change the markings imposed by the weapon. Therefore, in conducting a search against a database, to reduce the occurrence of false negative results, the criteria for including a database item as a candidate matching item must be considered relative to possible variations such as: whether the weapon has interchangeable barrels, whether it might be used with different sized ammunition, whether it might have been cleaned, whether it might have had heavy use between the database entry and the current characterization.

17-20
Paragraph at page 18, lines ~~19-22~~ now reads:

Images in the casing sides and bullet databases should be formed as composites of the multiple frames taken as the bullet or casing is rotated. The composite images can be oriented so as to align striations with the horizontal plane of the image. Due to spiraling of the lands and grooves, image segments must be composed to create an image of the resulting striation pattern from the various segments imaged.

22, line 26 - page 23, line 5
Paragraph at page ~~22~~, lines ~~1-10~~ now reads:

Figures 1a, 1b, and 1c are visible images of the primer areas of sibling casings. The images illustrate the effects of illumination variations and artifacts. In particular, the firing pin indentations in the centers lack any details, and each shows glint from the illumination. Each image is oriented based upon the breech face marks and the position of the firing pin indentation. 1a has the best detailed primer area. The illumination of 1b causes much of the breech face markings to be lost, and reverses the appearance of the feature at 10:00 from a white to a dark line inside a grey area. The firing pin indent also appears smaller than in a. In c, a slight variation in the illumination angle makes the firing pin indentation appear to be raised up instead. Turning the image upside down makes it appear to be an indentation; however then the position of the indentation is incorrect. Depending on the match engine, these siblings may not be detected as matches based upon these visible images due to the illumination-induced variations.

15-18 mcm
Paragraphs at page 23, lines ~~20-23~~ now reads:

Figure 6 is an infrared image of a shell casing at ambient temperature, with focus set for a distinctive tool mark.

Figure 7 is an infrared image of a shell casing at ambient temperature, with focus set for a distinctive tool mark in the primer area.

24-25
Paragraph at page 23, lines ~~29-30~~ now reads:

Figure 11 a,b,c illustrates the removal of the manufacturers markings from the casing image prior to matching.

Paragraph at page 24, lines 24-25 now reads:

A controlled light source 110 is then turned on to illuminate the ballistic item and a video camera 116 is used to produce a sequence of visible images 120 by varying the focus mechanism 118.

Paragraph at page 24, line 26 ^{mean} to page 25, line 4 now reads:
to page 24, line 30

Each image is annotated with date and time, workstation #, item temperature, focus setting, and item reference number. The focus and image capture processes can be automated such that a succession of minute variations in focus is performed and an image taken at each step, or the focus and image capture can be manually controlled using an examiners workstation consisting of a display screen 22 and input controls 24 including any combination of keyboard, mouse, voice, or similar device. The workstation also contains highlighting device 90 for manually specifying areas of images or textual information of particular interest to the examiner. The highlighter can be any combination of touch screen, lightpen, graphics tablet, or similar device. The display has the ability to mosaic several infrared 20 and visible 120 images on a single screen.

Paragraph at page 25, ~~lines 5-9~~ ^{lines 1-5} now reads:
lines 1-5 ^{mean}

Text information is entered which identifies the ballistics item and related information such as case #, weapon type, ammunition type, location where found, etc. That information can be read from an evidence tag using a bar code reader 28 or input through the controls of the examiners workstation such as by keyboard. The text information can be displayed on the screen 22 along with the corresponding annotated image.

Paragraph at page 26, lines ^{5-9 mem}~~9-13~~ now reads:

The resulting montaged infrared and visible images, along with their characteristics and textual information are entered into a database of infrared characterizations 50 and enhanced visible characterizations 150 of unknown ballistic items. The enhanced visible characterization can then be used with current ballistic identification methods and apparatus, producing more accurate results due to the elimination of illumination-induced artifacts, and the detection of hidden features due to shadow.

Paragraph at page 27, lines ^{3-7 mem}~~7-11~~ now reads:

Text information is entered which identifies the ballistics item and related information such as case #, weapon type, ammunition type, location where found, etc. That information can be read from an evidence tag using a bar code reader 28 or input through the controls of the examiners workstation such as by keyboard. The text information can be displayed on the screen 22 along with the corresponding annotated image.

Paragraph at page 27, lines ^{11-14 mem}~~15-18~~ now reads:

The sequences of infrared images are processed to extract and characterize apparent features at 42 using any of various standard automated image processing techniques or by manual highlighting by the examiner. Characterization at a minimum includes the relative positions of features, their shape, their area and perimeter length, and variation in gray scale distribution within the feature

Paragraphs at page 28, lines ~~6-19~~²⁻⁴ now read:
3-16 mem

Database 60 will contain characterization of known or linked ballistic items. When an unknown item 10 is presented for identification, it is processed as detailed above to produce its characterization at 50. The resulting characteristics are used to select initial candidates from the database 60 based upon text, image, and feature characteristics which are relatively immune to error or variation. For example, the calibre of ammunition. In matching shell casings, if the unknown firing pin indentation is centered, only database entries with centered firing pins are considered as potential candidates. The presence or breech face markings, ejector or extractor marks may also be considered relatively immune to error or variation.

The initial candidate matches are then further processed using the text matching engine 70 which might provide for example the date of manufacture of the weapon, meaning that all ballistic items collected prior to that date need not be considered as matches. Other information is compared and scored as to similarity, such as information about the type of crime associated with the ballistics item, the locale where the item was collected, the presence of other similar items at the same collection, etc. The similarity score will generally not exclude candidates from further consideration, but may influence their rank ordering in presentation to a ballistics examiner for consideration below.

Paragraphs at page 28, lines ~~20-28~~^{17-25 mem} now read:

Remaining candidate matches are then further processed using the feature matching engine 72 which first compares summary characteristics such as the number and type of features, and then compares the details of each feature of the unknown and candidate items. Various metrics or scoring techniques can be defined to